

Biology 204 Human Anatomy & Physiology

Review Questions for Midterm II\*

1. Name the structures & functions of a generalized neuron.
2. How do nerves do work? Which ions are the most important?
3. Describe an action potential in a diagram &/or words.
4. What does myelin do?
5. What happens at synapses?
6. How do postsynaptic potentials act to integrate signals?
7. Describe in words or pictures temporal & spatial summation.
8. What does myelin do? How can its disruption through disease affect neurotransmission?
9. What happens at synapses? How can this be manipulated by pharmaceutical agents?
10. How do postsynaptic potentials act to integrate signals?\*
11. Describe in words or pictures temporal and spatial summation.\*\*
12. Despite its adult appearance, the CNS is a tubular, segmented structure. Explain.
13. Given a drawing of the brain, label the lobes and describe their major functions.
14. What is somatotopy?
15. How is the brain protected? Start from the outside and work inward. Think from big (getting hit by a truck) to small (pharmaceuticals, bacteria, & viruses).
16. How is the gray matter of the spinal cord organized?
17. What is white matter for?
18. What do the different fibers (association, commissural, & projection) in the brain do?
19. What do the cranial nerves do (innervation & function (somatic, sensory, or both))?
20. What are the basic components of a reflex arc?
21. What are anatomical and physiological differences between the 2 divisions of the autonomic nervous system?
22. At a structural, subcellular level, what do all the special senses have in common?
23. What are the differences between sensation and perception?
24. What are perceptual detection, magnitude estimation, spatial discrimination, feature abstraction quality discrimination, & pattern recognition?
25. What are fixed action patterns?
26. What are the 3 levels of motor integration?
27. How can stress or emotional state affect memory?
28. How are neural and endocrine systems linked? Give one example, starting with brain input and following it through to a effector tissue. Be sure to include any feedback loops in your description.
29. What is the difference between endocrine and paracrine?
30. Compare and contrast steroid and peptide hormones in terms of chemical properties, & tempos & modes of action.
31. How could disruption of the parathyroid conceivably affect heart and skeletal muscle function?
32. Name the major glands of the endocrine system and what they do. How would their disruption affect different systems?
33. Name other hormone producing tissues and what they do.
34. What was Hans Selye's contribution to physiology, and what was controversial about his work?

\*To be given Monday 24 October 2005

\*\*I will discuss these topics after Fall Break